

ternational Rules of Botanical Nomenclature, 'A name of a taxonomic group must be rejected if the characters of that group were derived from two or more entirely discordant elements, especially if those elements were erroneously supposed to form part of the same individual. A list of names to be abandoned for this reason (*Nomina confusa*) will form Appendix V' [not published]. The writer proposes that *Prosopis odorata* Torr. should be included in this list."

In the light of the 1956 rule, it is fortunate that in this instance segregation is clear and unmistakable, and the choice is easy. *Prosopis pubescens* Benth. (in Hook. Lond. Jour. Bot. 5:82. 1846) is established clearly in nearly all recent literature for the screw-bean, and changing the name by substituting *Prosopis odorata*, published one year earlier, is not desirable, even though this was done by Britton and Rose (loc. cit.). Furthermore, selection of the fruits alone for a lectotype would be less satisfactory than choice of the combination of twigs, leaves, and flowers. So long as *Prosopis juliflora* var. *Torreyana* is considered to be a variety, restriction of the type specimen of *Prosopis odorata* to include only the material from that population system will cause no nomenclatural upset. Therefore, the three sheets in the Torrey Herbarium of the New York Botanical Garden, the fruits excluded, are designated together as a lectotype of *Prosopis odorata* Torr. & Frem.

If the lectotype rule had been adopted before 1941, the writer would have recombined the epithet *odorata* in varietal rank under *Prosopis juliflora* (Swartz) DC. rather than to add the new epithet var. *Torreyana* to the nomenclature. Should var. *Torreyana* be elevated to specific rank, however, it must be known as *Prosopis odorata* Torr. & Frem.

Department of Botany,
Pomona College
Claremont, California

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TWO NEW SPECIES OF HELIANTHUS FROM NEW MEXICO¹

R. C. JACKSON

During a field study of the New Mexican species of *Helianthus*, two new species were discovered. Morphologically they appear to be related to *Helianthus ciliaris* DC. but differ from this species in several diagnostic characteristics.

Helianthus heiseri sp. nov. Herba perennis 5-12 dm. alta; caulibus pluribus (vel unica) sparse strigosis, flavo-viridibus, striatis; foliis oppo-

¹ Field work for this study was supported by faculty research grants from the University of New Mexico.

sitis, sessilibus; laminis ad 7 cm. longis 2.3 cm. latis, cuneatis vel obtusis, acuminatis, serratis vel dentato-crenatis, ambis paginis strigosis resinosisque, nervis tribus conspicuis instructis; capitulis 1-3 in pedunculis 4-10 cm. longis; disco diam. 1.5-2.0 cm.; phyllariis lanceolatis, ciliatis, dorso levibus viridibusque, 2.6-3 mm. latis, 8-10 m. longis; radiis 16-20, 10-12 mm. longis; disci corollis 4-4.5 longis, basi flavis puberulentisque, lobis purpureis puberulentisque; receptaculi paleis acutis purpureis disci corollas aequantibus, earum apicibus acutis dorso plus minusve villosis; achaeniis ca. 3 mm. longis in maturitate nigris; pappis florum discorum aristis 2 lanceolatis instructis; pappis eorum radiorum aristis 1-3 inaequalibus lanceolatis item instructis.

Perennial herb, 5-12 dm. high; stems one or several, sparingly strigose, yellowish-green, striate; leaves opposite, sessile, the blades up to 7 cm. long and 2.3 cm. wide, cuneate or obtuse at the base, acuminate at the tip, serrate or dentate-crenate on the margins, strigose and resin-dotted above and below, conspicuously 3-nerved; heads 1-3 on peduncles 4-10 cm. long; disc 1.5-2.0 cm. in diameter; phyllaries lanceolate, ciliate, smooth and green on the backs, 2.6-3.3 mm. wide, 8-10 mm. long; rays 16-20, 10-12 mm. long; disc corollas 4-4.5 mm. long, yellow and puberulent at the base, the lobes purple and puberulent; pales of the receptacle acute, purple, about equal with the disc corollas, the tips moderately villous on the backs; achenes about 3 mm. long, black at maturity; pappus of the disc of 2 lanceolate awns, the pappus of the rays of 1-3 unequal, lanceolate awns.

Type. New Mexico. Grant County: shallow ditch near the Mimbres River, elevation ca. 5400 feet, September 30, 1957, *Jackson 2521-1* (IND.) Isotype. *Jackson 2521-2* (UNM).

Additional specimens from the type locality are deposited in the herbaria listed above.

Thus far *H. heiseri* is known only from the Mimbres River Valley where it has been observed at several sites other than the type locality. This entity was probably responsible for Torrey's (1859) report of *H. grosseserratus* in "the valley of the Mimbres." The two species have several characteristics in common.

Helianthus crenatus sp. nov. Herba perennis 5-12 dm. alta; caulibus pluribus (vel unica), sparse strigosis, flavo-viridibus, striatis; foliis oppositis, sessilibus vel brevipetiolatis; laminis ad 9 cm. longis et 2.3 cm. latis, oblanceolatis, acutis, attenuatis, inaequaliter crenatis vel crenatolobatis insuper strigosis resinosisque, subtus strigosis vel strigoso-pilosis resinosisque, nervis tribus conspicuis instructis; capitulis 1-6 in pedunculis 6-13 cm. longis; disco diam. 1.8-2.4 cm.; phyllariis anguste lanceolatis, ciliatis, dorso in maturitate strigosis, aliquantum patentibus, 2-3 mm. latis, 10-12 mm. longis; radiis 16-20, 10-12 mm. longis; disci corollis 5-5.7 mm. longis, basi flavis puberulentisque, lobis purpureis puberulentisque; receptaculi paleis quam disci corollis brevioribus, purpureis, dorso

ad apicem versus moderate villosis; achaeniis ca. 3 mm. longis, in maturitate nigris; pappis florum discorum aristis 2 lanceolatis instructis; pappis eorum radiorum aristis 1-3 inaequalibus lanceolatis item instructis.

Perennial herb, 5-12 dm. high; stems one or several, sparingly strigose, yellowish-green, striate; leaves opposite, sessile or short petioled, the blades up to 9 cm. long and 2.3 cm. wide, oblanceolate, acute, attenuate at the base, unequally crenate or crenate-lobed on the margins, strigose and resin-dotted above, strigose or strigose-pilose and resin-dotted below; conspicuously 3-nerved; heads 1-6 on peduncles 6-13 cm. long; disc 1.8-2.4 cm. in diameter; phyllaries narrowly lanceolate, ciliate, strigose on the backs, somewhat spreading at maturity, 2-3 mm. wide, 10-12 mm. long; rays 16-20, 10-12 mm. long; disc corollas 5-5.7 mm. long, the base yellow and puberulent, the lobes purple and puberulent; pales of the receptacle shorter than the disc corollas, purple, acute, the tips moderately villous on the backs toward the apices; achenes about 3 mm. long, black at maturity; pappus of the disc of 2 lanceolate awns; the pappus of the rays of 1-3 uneven lanceolate awns.

Type. New Mexico. Sierra County: low area on the south side of Truth or Consequences, June 22, 1957, *Jackson 2504-1* (IND). Isotype. *Jackson 2504-2* (UNM).

Additional specimens are deposited in the herbaria listed above.

Helianthus heiseri and *H. crenatus* are closely related morphologically. The main diagnostic differences separating the two are apparent in the descriptions. In addition, the two species are separated by flowering dates. *Helianthus crenatus* reaches its maximum flowering period during the latter part of July, whereas *H. heiseri* reaches its peak from the middle to the latter part of September. Geographically the two species are separated by the Black Mountain Range.

It is quite possible that *H. crenatus* and *H. heiseri* may have been lumped with *H. ciliaris* DC. in the past. Some of the distinguishing characteristics are listed below in a comparison of the two new species with *H. ciliaris* as it occurs in the Rio Grande Valley of New Mexico.

	<i>H. ciliaris</i>	<i>H. heiseri</i>	<i>H. crenatus</i>
Stems	Mostly glabrous, glaucous	Sparingly strigose	Sparingly strigose
Leaves	Glabrous, bluish-green and glaucous	Strigose, light- or yellowish-green, resin-dotted	Strigose to strigose-pilose, light- or yellowish-green, resin-dotted
Phyllaries	Ovate, obtuse, erect appressed, glabrous or subglabrous on the back, ciliate, about 3.5 mm. wide, 5-7 mm. long	Lanceolate, acute, loose, glabrous on the back, ciliate, 2.6-3.3 mm. wide, 8-10 mm. long	Narrowly lanceolate somewhat spreading, strigose on the back, ciliate, 2-3 mm. wide, 10-12 mm. long

In the population of *H. crenatus*, several individuals not typical of the population as a whole were found. These plants were different from the

type in that some had long trichomes on the stem, the leaves were ashy grey, more heavily pubescent, and they apparently flowered earlier. Hybridization between *H. crenatus* and *H. ciliaris* may have been responsible for some of these variations, but generally they represent combinations not present in either species. Furthermore, Heiser and Smith (1955) have reported the chromosome number of *H. ciliaris* as $n=51$ (also $n=34$, Heiser unpublished) while the writer has found $n=17$ in *H. crenatus*. It may well be that these variations resulted from past hybridization with an unknown or now extinct species.

Department of Botany,
University of Kansas,
Lawrence, Kansas

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CHROMOSOME COUNTS IN THE SECTION SIMIOLUS OF THE GENUS MIMULUS (SCROPHULARIACEAE). III.

BARID B. MUKHERJEE AND R. K. VICKERY, JR.

This report¹ on the determination of chromosome numbers in the section *Simiolus* of the genus *Mimulus* is an integral part of a long range investigation into the taxonomy, genetics, and evolution of species in *Mimulus* (Vickery, 1951). Taken in conjunction with the previous counts (Vickery, 1955 and Mukherjee, Wiens, and Vickery, 1957), the counts reported here reveal a pattern of evolution in section *Simiolus* that involves both polyploidy and aneuploidy.

A slightly modified version of the technical method of Swaminathan, Magoon, and Mehra (1954) was found to produce better results than the methods previously used (Vickery, 1955 and Mukherjee, Wiens, and Vickery, 1957). Buds expected to contain anthers at the desired stages of microsporogenesis were killed and fixed for 24 hours in a mixture of two parts absolute ethanol and one part glacial acetic acid saturated with ferric acetate. Acetic acid was substituted for the propionic acid called

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